

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for generating $O1^+$ and/or $O4^+$ oligodendrocytes, said method comprising growing neurosphere (NS) cells in a culture medium that promotes differentiation of NS cells into $O1^+$ and/or $O4^+$ oligodendrocytes, said culture medium comprising one or more gp130 activators selected from the group consisting of CNTF, oncostatin-M (OSM), IL-6, IL6R/IL6 chimera and IL-11, and wherein said culture medium specifically enhances differentiation into the $O1^+$ and or $O4^+$ oligodendrocyte lineage, thereby causing the NS cells to differentiate along the oligodendrocyte lineage into $O1^+$ and/or $O4^+$ oligodendrocytes.

2. (Cancelled)

3. (Previously Presented) The method according to claim 2, wherein the gp130 activator is IL-6.

4. (Cancelled)

5. (Previously Presented) The method according to claim 1, wherein the cells are dissociated NS cells.

6. (Cancelled)

7. (Previously Presented) The method according to claim 1, wherein oligodendrocytes of O1⁺ lineage are generated.

8. (Previously Presented) The method according to claim 1, wherein oligodendrocytes of O4⁺ lineage are generated.

9-53. (Cancelled)

54. (Currently Amended) ~~A~~The method in accordance with claim 1, wherein said one or more gp130 activators is the only growth or differentiation agent present in the culture medium.

55. (Currently Amended) ~~A~~The method in accordance with claim 1, wherein said NS cells are human NS cells.

56. (New) The method according to claim 1, wherein said culture medium promotes myelinating activity.

57. (New) The method according to claim 1, wherein said culture medium resulted in formation of large and highly branched O1⁺ and/or O4⁺ oligodendrocytes exhibiting large myelin membranes.